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Robert P. Craig  
*St Mary's College*

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# PIAGET'S THEORY OF CONCEPTUAL DEVELOPMENT AS IT APPLIES TO THE TEACHING OF READING

*Robert P. Craig*

ST. MARY'S COLLEGE, ORCHARD LAKE, MICHIGAN

This essay will investigate Piaget's theory of conceptual development as it applies to the teaching of reading. Piaget's views are important as a corrective to much of the behavioral approach to reading—using contingencies of reinforcement to aid students in learning (memorizing?) basic units of language and in remembering linguistic rules. It is obvious that one can "remember" such rules but not be able to apply them to a particular situation. We will discover that this is Piaget's main point in his criticism of behaviorism.

One of the important insights into children's intellectual development that Piaget offers us is that each child develops "uniquely"; thus, the teacher (or any adult) should not impose his/her standards of logic on the student. In understanding the child's growth the teacher must rid him/herself of egocentrism. In whatever way possible, the teacher needs to take the student's point of view, to be empathetic to the student's developmental process. Learning, according to Piaget, is more something the student does (through active participation in the learning process) than something the student has done for him/her by an educator.(1) Let us, then, examine how Piaget's view of intellectual (concept) development relates to the teaching of reading.

Piaget, among others, has disputed the notion that a person's IQ is fixed. For Piaget, there is an interaction between heredity and environment in intellectual development. Thus, intelligence constantly changes through the individual's stages of cognitive development.(2) Thus, in understanding Piaget's thoughts regarding the teaching of reading the educator would have to know the developmental stage of the student and consider the intellectual process evident at that stage. For instance, if a student has not developed processes of logical reasoning, then he/she can't handle abstract concepts; so the teacher would have to develop teaching strategies to reflect this level of intellectual growth on the student's part. As I have written elsewhere(3), if the student cannot cope with certain logical (abstract) problems, the educator needs to "set up" an environment whereby logico-mathematical operations can be learned. This is as important in science as it is in reading.

Piaget would have quibbles with the current behaviorist approach to the teaching of reading, for he feels that knowledge

comes from within the student and not from without, as the behaviorist with the insistence on positive reinforcement contends. Like John Dewey, Piaget equates learning with experiencing.(4) It is the student's interaction with a particular environment that increases knowledge—and also increases cognitive functioning. The way many reading skills are taught (with the teacher doing X to insure skill Y) are contrary to the sensory-motor, the pre-operational, and the concrete operational stages of cognitive development. To quote Phil Jackson, "Teachers have a tendency to 'teach' and have children listen.(5) This may apply to teaching reading as to teaching anything.

For Piaget, intelligence develops through a sequence of stages. These stages are somewhat age-related, but they are as well dependent on human experience and social (educational) interaction. It is through the student's own actions that he/she learns about the world. This knowing is developed through two processes; what Piaget refers to as assimilation, and accommodation.(6) Sensory knowing is termed assimilation, while the restructuring of new cognitive structures (partly through assimilation and the interaction it demands to develop) is called accommodation.

Thus the intellect has structures in a similar fashion to bodily structures (digesting food, for instance). These structures Piaget refers to as "schemata"; and these develop as the individual assimilates knowledge. The restructuring (accommodation) is the *modus operandi* for understanding one's world; for coping with the multifaceted aspects of experience. It is during the pre-operational stage (roughly occurring during the first three years of schooling) that the stage is set for further development; where accommodation is most clearly visible. It is important, then, to examine this preoperational phase, for it will give us some guidelines for teaching reading.

## II

At the preoperational stage the child "lets go" of some of the exclusive functioning which is evident at the sensory-motor phase. The student now begins to function in a conceptual-symbolic mode. Yet there are several reasons why the student at the pre-operational stage has difficulty learning the alphabet and its phonemic representations. The individual at the preoperational stage is bounded by egocentrism, so that transformations (accommodation) become less frequent than at subsequent stages of cognitive growth.(7)

What, though, does egocentrism imply? At the preoperational stage the student believes all people think as he/she does. The student is unable to consider the viewpoint of another. This ability is derived through increased social interaction, for it is through such interaction that the child realizes others' perceptions differ from his. Thus, if a student is dominated by egocentric perceptions, the child will not be interested in learning to read others' thoughts and ideas. Egocentrism and empathy are antithetical concepts.

As was just mentioned, the student at the preoperational

stage does not attend to transformations (accommodation) very well. For instance, if a ball fell from a shelf to the floor, the individual would certainly know (realize) what has happened; the child would know that the cause of the ball being on the floor is that it fell from the shelf. But the student would be unable to think of the steps between the cause-effect relationship; the child may not be able to visualize the ball falling to the floor.

If this degree of transformation is impossible for the child, we as teachers need to understand what this may mean for the teaching of reading. The process of logical thought (realizing as many steps as possible in the ball's falling to the floor) has direct applications for reading instruction. If the child cannot yet perceive intermediate steps involved in causal relationships (a student at the preoperational stage, that is), then how can teachers of reading expect the student to develop certain reading skills through letter-sound associations? Going from a letter-sound association to stringing words together in some fashion, to putting words into some meaningful sentence is not a miraculous process; but its accomplishment does depend on the ability of the student to perform logical thought processes at varying levels.

### III

It is quite easy for most children to memorize the sound-symbol correspondence of any set of letters. Even very young children, according to Piaget, have the ability (that is, the cognitive functioning) to learn to attach phonemic equivalents to a graphemic symbol. This means that since children can associate (memorize) they know that the letters d, o, and g are equivalent to "dog".(8) Yet the word "dog" does not obviously sound like the separate sounds for d/o/g. In more technical language, the word "dog" has a different "graphemic-phonemic" relationship than letters d,o,&g.

If children are merely taught to associate sounds (memorize sound-symbol relationships) he/she will have difficulty (to say the least) in comprehension. The student at the preoperational stage who cannot "transform words" when they change their appearance would have difficulty "sounding out" the phonetic equivalent of "e" on the words: met meet & meat. One cannot merely memorize rules and then decide which words they do or do not apply to. In order to learn to read children must have a large conceptual base acquired from experience for words to have meaning.(9) And "experiencing", as was said, is done in the classroom through interaction with others and with the environment. In a word, reading teachers must construct experiences (and use natural ones) for the student to acquire this broad conceptual base. A couple of practical suggestions regarding this will be given later. No amount of knowing about reading will suffice for the student to know how to read.

### IV

Another aspect of preoperational thinking Piaget refers to as "centering".(10) This means that in the act of perception the child focuses his/her attention (centers in) on only one aspect of a whole at once. The preoperational child does not perceive

in gestalts, but in parts. For instance, when shown a row of sticks a child can only focus on their length but not on their spatial relationships at the same time.

What does this perceptual ability (or lack of it) have to do with reading? It follows logically that a student who is at the preoperational stage (with its attendant centering strategy) cannot be expected to both learn rules and to apply them, for the child can only center in on one task at a time. Thus the primary school child cannot pursue a reading program by which he/she is expected both to know grapheme-phoneme relationships and to put words together to form a sentence. Children can learn verbal relationships among letters in the alphabet, for instance, but not be able to put letters into words or to put words into sentences.

Likewise, Piaget's concept of "reversibility" has vast implications for teaching reading.(11) "Reversibility" is an aspect of the child's cognitive process which allows him/her to follow an operation from its conclusion back to its beginning (and vice versa). The student at the preoperational stage (who cannot perform this task) cannot perform such activities as converting graphemes to phonemes. The child cannot logically reason from a grapheme to a phoneme. This would demand reversibility in thinking, a process the child has not yet developed.

To put this differently, it takes the development to the concrete stage of cognitive growth for the student to handle both parts and wholes of words. To remember rules of relationships through which one has the ability to transform letters and to synthesize meaning from letter-combinations the student must be a concrete thinker. Thus, the ability to reverse thought and to decenter (rather than merely center) are prerequisites for learning to read.

# V

What practical application does all this "psychological talk" have for reading instruction? There are several applications which can be mentioned here, but not elaborated upon:

A. Before reading instruction can be initiated, the teacher needs to assess the student's abilities and cognitive learning sequences. Piaget never tires of pointing out that each student has a "unique" manner of relating to the social and physical environments. A student can only be taught to read after his/her cognitive developmental level has been evaluated.

B. The reading teacher needs to assess both the general and the specific cognitive abilities of the student. The student's general level of cognitive growth needs to be evaluated as well as the particular mode of intellectual functioning within that general level. It is very important in reading instruction, for instance, to ascertain the mode of the student's representations of reality. It is important to know if the student can understand pictorial representations; or if the student can relate gestures to concrete objects (that pointing to X is suggesting that the student pay attention to it).

C. The preoperational student (in primary grades) should

be helped to build a perceptual base from the environment before reading can be initiated. This interaction should include the manipulation of concrete materials to the use of pictorial and symbolic modes of representing reality. Reading should move from the development of perceptual-motor functioning to abstract representations (of which words are one type).

D. Piaget's theory of reading instruction is often termed the "language-experience approach." This approach is based on the belief that learning to read must be based on the experience(s) of the learner to be effective. Reading, on this view, becomes an extension of the student's own language and experience—something he/she already possesses and does not have to be taught to experience, although they can be taught about. This "language-experience approach" to reading instruction is rooted in the child himself/herself. The child must be able to respect his/her own thoughts before the student can go on to read (to respect the thoughts of others). Likewise, the student needs to be aware of (and respect) his/her own way of talking about reality (relating it in a linguistic and metalinguistic manner) before the child can learn to read.

E. If the above arguments are correct, a few implications for the organization of the reading environment (classroom) can be drawn out. The list is not meant to be exhaustive:

- 1- The child would need time for self-expression, of which the use of language is an essential aspect. Experiences with art, drama, discussion, manipulation of objects, and so on, can be a start.
- 2- There needs to be time for the systematic study of language. Word study games, independent writing and the discussion of diction are but three vehicles for such study.
- 3- There needs to be time for students to be initiated into the language and thought of others. Perhaps before (or concurrent with) reading instruction, puppetry, musical compositions, art work, tapes and films can be used for this initiation.

Whatever else reading is, it is an active process. But the activity required in reading demands certain cognitive kinds of development. The student at the preoperational level is not capable of formal reading, for he/she is not yet capable of understanding the traditional alphabet. In order for the teacher to initiate the student into the beautiful process of reading the educator must determine the student's level of symbolic representation. Without this, the process of learning to read will be a horrid (and painful) one for the student. Wouldn't it be terrible if students echoed Einstein's words:

"After graduation I refused to pick up a book, to read an article, to even browse through a newspaper. The way I was taught to read kept coming back to me like a nightmare."(12)

Thank God he transcended his "reading-experience." Is it possible that some students never do?

## NOTES

1. This active approach to education and human development is elaborated on by Piaget in Science of Education and the Psychology of the Child. NY: Viking Press, 1969, Chapter One.
2. Jean Piaget, The Origins of Intelligence in Children. New York: W. W. Norton and Co., 1952, pp. 3-41.
3. I have discussed this in Robert P. Craig, "The Child's Construction of Space and Time." Science and Children, Vol. 19, No. 3 (November-December, 1981), pp. 36-37.
4. Dewey elucidates the relationship between learning and experience in Experience and Education. New York: MacMillan Company, 1979, pp. 25-32.
5. Philip Jackson, Life in Classrooms. New York: Holt, Rinehart and Winston, 1968, p. 17.
6. Piaget's clearest discussion of stage development as it relates to the processes of assimilation and accommodation is found in Genetic Epistemology. New York: Columbia University Press, 1970, Especially Chapter One.
7. This concept of "egocentrism" is elaborated on in many of the works of Piaget, for instance, see The Moral Chapter of the Child. New York, The Free Press, 1965, Chapter Four.
8. Piaget's thoughts in The Language and Thought of the Child suggest this. He never wrote a book devoted to the teaching of reading. This work is available through World Publications in New York, first published in 1973.
9. This "conceptual base" is discussed by Piaget in Science of Education and the Psychology of the Child, Chapter Three.
10. This concept is developed at length in Jean Piaget, The Construction of Reality in the Child. New York, Basic Books, 1954. Notice that even the title of the book implies that reality is "constructed" by the child; it is not determined by adult language and conceptualization, although the teacher can help "explain" different views of reality.
11. I have discussed this notion in a more philosophical context in Robert P. Craig, "On Jean Piaget." Educational Studies, Vol. 8, No. 3 (Fall 1977), pp. 43-45.
12. This quote is found in Paul Goodman's Growing Up Absurd. New York, Vintage Books, 1960, the Appendix.